What Was That Noise?

By LCdr. Matt Tobler

It was a nice afternoon off the Virginia coast. The first at-sea, work-up period for our carrier and air-wing team was a Tailored Ship's Training Activity I/II (TSTA I/II). Because of recent work-up schedule compression, some perceived, if not real, pressure existed to "get up on the step" as soon as possible to support early-deployment options.

The squadron still was in the midst of numerous aircraft modifications and transfers as we readied our eight jets. The maintenance department was digging in for the uphill battle, working on the hard-downing discrepancies, while supporting a typically aggressive air plan. Our spirits began to look up as my pilot and I saw the gentle crest of a centered ball crossing the ramp for the OK 3-wire, following a routine mission-tank, yo-yo event.

We hit the deck, went to full power, tugged against the straps, heard three seconds of buzzing vibration, pulled the throttles back, brought up the hook, folded the wings, and taxied clear of the landing area. "What was that noise?" my pilot casually asked, as if my additional 1,500 hours of experience somehow would provide the obvious answer.

We followed the director, started the auxiliary-power unit, gave a thumbs up to the flight-deck coordinator (FDC), signaled an "up" jet, and received the "hot switch" signal in return.

"Not sure, the noise sounded like a binding brake or an ECS (environment-control system) vibration," I guessed. "The motors look good across the board."

We taxied unnecessarily close to the edge of elevator 1 (EL1), then missed the Prowler's jamming pod by mere inches—standard parking on the boat. My pilot verified he had not touched the brakes on the rollout. We came up on the power for the final turn to our resting spot on EL1 and heard nothing but the soft hum of the mighty TF34s. We stopped, set the parking brake, and waited to get wrapped up.

"Roger that, it might have been a vibration from the ECS ducting when we went to full power," I replied, and started to clean up my cockpit for the hot switch.

Photo by PHAN Chirs Thamann

We secured the No. 2 engine, safed our seats, and signaled for the door to be opened. "I'm hopping out, see ya outside," I said.

I passed the status of the jet to the incoming right-seater, except for the vibration we heard in the landing area. I high-fived the maintenance officer (MO) as he manned up the left seat, and debriefed the FDC on the jet's status. My pilot and I went to start the toils of paperwork: CVIC, NAVFLIRs debrief sheets, tanker cards and gripes.

After chow, I completed some correspondence and headed to the ready room. Because I was the incoming maintenance officer, I stopped by the maintenance desk to check on the air force.

"Sir, FODed the No. 1 motor on 700, real bad, looks like an engine change," was the maintainer's reply.

Did you ever get a feeling like you did something wrong and someone was about to find out? I scampered to find the MO to hear his story, already having a good idea what I was going to hear. He described a somewhat uneventful flight, but he did mention a high-pitched tone from what sounded like the No. 1 motor when he went into tension on the catapult. The pilots talked about the tone, and, after reviewing the engine instruments (all which looked good), they went flying. The MO also said the No. 1 engine was a fraction weaker throughout the flight, but no additional suspicious sounds were heard, and no abnormal engine indications were observed. They recovered uneventfully two hours later.

The ensuing few hours were a blur, and all I remember is the sight of the No. 1 engine's fan blades all chewed up and the outcome of a series of discussions leading to the suspected cause of the incident. Apparently, a brake key broke off the left main wheel on the trap of my flight, bounded forward in the landing area, and subsequently was sucked into the intake when we went to full power in the wires. The ECS buzzing and vibration I thought we had heard actually was the brake key tearing up my fan blades *(see photo below)*, which only took a few seconds. Because of the hot switch, no aircrew or maintainer had time to notice the No. 1 fan blades. Though the indications of the problem now seem obvious, they weren't at the time, especially since the engine instruments showed no performance degradation.

There are lessons to be learned and relearned. The passdown from one crew to the next on a hot switch is critical. Events that don't seem extraordinary may provide a valuable piece of the puzzle to the next crew when they face something out of the ordinary. Armed with the information we had—a buzzing vibration when we landed—the MO could have pieced together the No. 1 engine had a serious problem.

No crew member should be convinced something is not serious when indeed it may be. My junior pilot may have had an inkling something more serious than an ECS vibration was wrong, but perhaps my experience with lots of strange Viking noises over the years convinced him that he didn't have to worry.

No sortie-completion rate in any training exercise is worth not taking the time to investigate a strange sound. We easily could have shut down both engines or at least recommended No. 1 be serviced after the hot-switch crew got No. 2 started. That's a hard call to make; obviously, you can't go chasing every strange vibration, thump, rattle, squeal, and hiss on an S-3. Use your best judgment and experiences to classify them as normal or abnormal, then follow through.

LCdr. Tobler flies with VS-24.